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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Yasushi MARUTA

Docket No: Q88418

Appln. No.: 10/538,762

Group Art Unit: Not yet assigned

Confirmation No.: Not yet assigned

Examiner: Not yet assigned

Filed: June 10, 2005

For: MULTIBEAM ANTENNA RECEPTION DEVICE
AND MULTIBEAM RECEPTION METHOD


**SUBMISSION OF INTERNATIONAL PRELIMINARY
EXAMINATION REPORT (IPER)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of the English translation of the International Preliminary Examination Report (IPER). It is assumed that copies of the cited references as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned will undertake to provide them upon request.

Respectfully submitted,


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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 12, 2006



PATENT COOPERATION TREATY

PCT/JP2003/015786

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rule 72.2)

To:

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c/o MARUYAMA PATENT OFFICE
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Toshima-ku, Tokyo 170-0013
JAPON

| | |
|---|---|
| Date of mailing (day/month/year) 25 August 2005 (25.08.2005) | |
| Applicant's or agent's file reference DP-981PCT | IMPORTANT NOTIFICATION |
| International application No. PCT/JP2003/015786 | International filing date (day/month/year) 10 December 2003 (10.12.2003) |
| Applicant NEC CORPORATION et al | |

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

None

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

None

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

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| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.+41 22 740 14 35 | Authorized officer Masashi Honda Facsimile No.+41 22 338 70 10 |
|--|--|

Translation

PATENT COOPERATION TREATY

PCT/JP2003/015786



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|---|---|---|
| Applicant's or agent's file reference DP-981PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/JP2003/015786 | International filing date (day/month/year) 10 December 2003 (10.12.2003) | Priority date (day/month/year) 12 December 2002 (12.12.2002) |
| International Patent Classification (IPC) or national classification and IPC H04B 1/10, 7/08, 7/26 | | |
| Applicant NEC CORPORATION | | |

| | |
|--|--|
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p> | |
| <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input checked="" type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p> | |

| | |
|---|---|
| Date of submission of the demand 10 December 2003 (10.12.2003) | Date of completion of this report 22 March 2004 (22.03.2004) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/015786

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP 03/15786

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-38 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-38 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-38 | YES |
| | Claims | | NO |

2. Citations and explanations

Document 1 (JP 11-266180 A (Fujitsu Ltd.), 28 September 1999, entire document) discloses an "array antenna system that is provided with: a beam former; a despreading/delay-adjusting unit provided for each path of the multipaths, which despreads each of the aforementioned plurality of beams in accordance with the signals that arrive via said paths, applies a delay adjustment to the despread signals in which a desired signal component is large according to the path, and outputs the resulting signals; and a combiner which combines the outputs from each of the despreading/delay-adjusting units."

Document 2 (JP 10-190495 A (Fujitsu Ltd.), 21 July 1998, entire document) discloses an "interference canceller that includes an interference canceller section, which comprises a replica generation section and an interference removal section, for each beam signal, wherein the aforementioned interference removal section is provided with a means for subtracting the interference replica that corresponds to a given beam signal and the interference replica that corresponds to another beam signal from the given beam signal."

Document 3 (JP 2002-280932 A (Mitsubishi Electric Corp.), 27 September 2002, claim 2) discloses a "means for controlling the path detection range, which eliminates the

power signal peaks that comprise a path within the delay signal power distribution as an apex each time a path is detected by the means for detecting maximum values."

Document 4 (JP 2002-217779 A (NTT Docomo Inc.), 02 August 2002, claim 2) discloses the feature of "establishing the detection range for the path to be detected by means of the second polarized antenna branch on the basis of the path position that is detected by the first polarized antenna branch and then detecting for the path within the established path detection range by means of the second polarized antenna branch."

Claims 1-20

The feature wherein "when detecting for a path that is defined by a combination of the path delay, which is the arrival timing, and the reception beam number, which is the arrival direction, for the multipaths of each user, the present path detection range is controlled on the basis of the path information that was detected previously," is not disclosed or suggested in any of the documents that are cited in the international search report.

Claims 21-38

The feature wherein "the path detection range is established on the basis of a combination of the path delay and the reception beam number, which are detected by means of the advance beam path detection step, and the reception quality information for the user signals within the aforementioned combination of the path delay and the reception beam number" is not disclosed or suggested in any of the documents that are cited in the international search report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/015786

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

| <u>Application No. Patent No.</u> | <u>Publication date (day/month/year)</u> | <u>Filing date (day/month/year)</u> | <u>Priority date (valid claim) (day/month/year)</u> |
|---------------------------------------|--|---|---|
| 2003-283394 E, A | 03 October 2003 (03.10.2003) | 27 March 2002 (27.03.2002) | |

2. Non-written disclosures (Rule 70.9)

| <u>Kind of non-written disclosure</u> | <u>Date of non-written disclosure (day/month/year)</u> | <u>Date of written disclosure referring to non-written disclosure (day/month/year)</u> |
|---------------------------------------|--|--|
| | | |